



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/645,103

08/21/2003

Neil Muncy

MOD SCI 202-KFM

7267

10037 7590 08/24/2007
MILDE & HOFFBERG, LLP
10 BANK STREET
SUITE 460
WHITE PLAINS, NY 10606

EXAMINER

KURR, JASON RICHARD

ART UNIT

PAPER NUMBER

2615

MAIL DATE

DELIVERY MODE

08/24/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/645,103

Applicant(s)

MUNCY ET AL.

Examiner

Jason R. Kurr

Art Unit

2615

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 13 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6,8 and 11-15 is/are rejected.
- 7) ☒ Claim(s) 7,9,10 and 16-19 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date 4/2/07.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- ☐ Notice of Informal Patent Application
- ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6 and 8 are rejected under 35 U.S.C. 102(b) as being anticipated by Tanaka et al (US 5,272,756).

With respect to claim 1, Tanaka discloses an apparatus for generating and displaying images for determining the quality of audio reproduction in a surround sound system that produces a left total audio signal ("Lt signal") and a right total audio signal ("Rt signal")(col.2 ln.56-63), said apparatus comprising: (a) a left audio signal input for receiving the signal Lt (fig.5 #10); (b) a right audio signal input for receiving the signal Rt (fig.5 #20); (c) a display processor (fig.5 #30) connected to said left and right audio inputs and having a display control output, for producing a display control signals (fig.5 "L+R","L-R") at said output in dependence upon said signals Lt and Rt; and (d) a graphic image display (fig.5 #64), coupled to said display control output, for displaying a two-dimensional image within an X and Y coordinate system, wherein relative in-phase components of said signals Lt and Rt are represented as positive Y coordinate points in the image, wherein relative out-of-phase components of said signals Lt and Rt are represented as negative Y coordinate points in the image, and wherein the respective

amplitudes of the signals Lt and Rt are represented as negative X and positive X coordinate points, respectively, in the image (fig.2a,2b, col.1 ln.51-68. fig.11a,11b).

With respect to claim 2, Tanaka discloses the apparatus defined in claim 1, wherein the signal Lt is comprised of signal elements unique to the left sound channel only (Lo), plus equal level and in-polarity signal elements common to both Lt and Rt (C), plus equal level but out-of-polarity signal elements common to both Lt and Rt (Surr) (col.5 ln.47-67).

With respect to claim 3, Tanaka discloses the apparatus defined in claim 1, wherein the signal Rt is comprised of signal elements unique to the right sound channel only (Ro), plus equal level and in-polarity signal elements common to both Lt and Rt (C), minus equal level but out-of-polarity signal elements common to both Lt and Rt (-Surr) (col.5 ln.47-67).

With respect to claim 4, Tanaka discloses the apparatus defined in claim 1, wherein the display processor calculates each X-Y coordinate point for display in accordance with the formulae: $Y = C + (-Surr)$; and $X = -Lo + Ro$; where Lo are signal elements unique to the left sound channel only, Ro are signal elements unique to the right sound channel only, C are equal level and in-polarity signal elements common to both signals Lt and Rt, and Surr are equal level but out-of-polarity signal elements common to both signals Lt and Rt (col.1 ln.51-68).

With respect to claim 5, Tanaka discloses the apparatus defined in claim 1, wherein the display processor processes the signals Lt and Rt in analog form, to produce analog display control signals at said output (col.5 ln.59-67).

With respect to claim 6, Tanaka discloses the apparatus defined in claim 5, wherein said display processor produces an analog X coordinate control signal by summing the outputs of (1) a first full wave rectifier (fig.7A #720) which is connected to the left audio signal input to receive the signal Lt and which produces a negative output signal, and (2) a second full wave rectifier (fig.7A #722) which is connected to the right audio signal input to receive the signal Rt and which produces a positive output signal (col.7 ln.17-34).

With respect to claim 8, Tanaka discloses the apparatus defined in claim 6, wherein the display processor further comprises a display compression generator connected to a gain control amplifier at said output to adjust the gain of the X coordinate control signal (fig.5 #66).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tanaka et al (US 5,272,756) in view of Bradford (US 4,691,358).

With respect to claim 11, Tanaka discloses the apparatus defined in claim 1, however does not disclose expressly wherein the display processor samples the signals Lt and Rt at a given sampling frequency to produce digital signals and processes the

digital signals in digital form to produce digital display control signals at said output.

The display processor of Tanaka merely adds or subtracts analog signals, which are in turn used to control the display.

Bradford discloses an apparatus that provides a display of the stereo image and aural perspective of stereophonic sounds. The invention of Bradford also uses analog circuitry to accomplish the task of displaying the stereophonic sounds as images, however Bradford does disclose that the major components of the invention could be replaced by digital components (col.4 ln.48-58). At the time of the invention it would have been obvious to a person of ordinary skill in the art that the analog components in the invention of Tanaka could be replaced by digital components such as a digital display and digital processor to achieve the same results as the disclosed analog circuitry, as taught by Bradford. The motivation for doing so would have been to provide a system that would be capable of calculating and displaying other sound features, such as tempo and timbre by simply reprogramming the digital processor.

With respect to claim 12, Tanaka discloses the apparatus defined in claim 11, however does not disclose expressly wherein the display processor samples the signals L_t and R_t at a frequency which is at least twice the maximum frequency of the signals L_t and R_t . Official Notice is taken that it is well known in the art to sample signals at a frequency twice that of the maximum frequency of the sampled signal. This is known as the Nyquist Theorem. At the time of the invention it would have been obvious to use a digital processor to sample the signals L_t and R_t at a frequency, which is at least twice the maximum frequency of the signals L_t and R_t . The motivation for doing so would

Art Unit: 2615

have been to acquire an adequate number of data samples to properly convert the analog Lt and Rt into digital signals.

With respect to claim 13, Tanaka discloses the apparatus defined in claim 11 in view of Bradford, wherein the display processor calculates the digital X and Y coordinates of each successive point to be displayed. The analog circuit of Tanaka continuously calculates and displays the signals on X and Y coordinates, therefor as shown by Bradford in the rejection of claim 11, a digital circuit would be able to replace the analog circuit and achieve the same result, such as calculating and displaying each successive point.

With respect to claim 14, Tanaka discloses the apparatus defined in claim 13, wherein the display processor stores a plurality of points to produce a scatter plot as a single image frame and thereafter passes said image frame to said output for display (fig.2c, 2d).

With respect to claim 15, Tanaka discloses the apparatus defined in claim 14, wherein a plurality of image frames, each comprising said plurality of points, are displayed in succession to form a video image (fig.2c, 2d).

Allowable Subject Matter

Claims 7,9-10 and 16-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

Applicant's arguments filed June 13 2007 have been fully considered but they are not persuasive.

With respect to the independent claim 1, the Applicant argues that Tanaka et al (US 5,272,756) does not disclose or mention a "Surround Sound" or the standard left total (Lt) and right total (Rt) audio signals, and consequently there is no possibility that the system of Tanaka could operate in the same manner, and produce the same screen display as the applicant's system. The Examiner would like to note that claims are read in light of the specification, however limitations and disclosure in the specification are not read as limitations in the claims. The present independent claim merely discloses the inputting of a right and left "total" audio signal. Such a limitation does not describe the input signals as being "Surround Sound" audio signals. The invention of Tanaka clearly inputs a left and right channel audio signal to be utilized on a four-quadrant X/Y display. These left and right channel audio signals have been interpreted by the Examiner as being left and right "total" audio signals as presented in the independent claim 1. The Examiner maintains the previous rejection of claim 1, wherein Tanaka anticipates the present claim language.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason R. Kurr whose telephone number is (571) 272-0552. The examiner can normally be reached on M-F 10:00am to 6:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vivian Chin can be reached on (571) 273-7848. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2615

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JK

JK



VIVIAN CHIN
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2200